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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,035	03/19/2001	Satoshi Murata	1324.65321	9348

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Patrick G. Burns, Esq.  
GREER, BURNS & CRAIN, LTD.  
300 South Wacker Dr., Suite 2500  
Chicago, IL 60606

EXAMINER
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KENNEDY, JENNIFER M

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/812,035

**Applicant(s)**

MURATA ET AL.

**Examiner**

Jennifer M. Kennedy

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

Applicants' arguments with regard to the rejections under 35 U.S.C. 102 or 103 have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

Applicants' argument concerns that Ishihara et al. does not disclose a step of dispensing liquid crystals which has a predicting step to predict an optimum quantity of liquid crystals that are encapsulated between two substrates and controls the quantity of dispensed liquid crystals based on the predicted quantity. The examiner disagrees, and maintains that Ishihara does disclose a step of dispensing liquid crystals which has a predicting step to predict an optimum quantity of liquid crystals that are encapsulated between two substrates and controls the quantity of dispensed liquid crystals based on the predicted quantity. Ishihara clearly states that a diameter of spacers (a known variable) is held fixed then the amount of liquid crystal to be deposited can be determined or preselected and controlled when dispensing (see column 5, line 40 through column 6, line 15 and column 3, lines 40-45). The examiner notes that predicting is defined by Webster's Collegiate Dictionary, Tenth Edition, as "to declare or indicate in advance; or to foretell on the basis of observation experience, or scientific reason". Clearly the preselected, predetermined value of  $V_{max}$  in Ishihara et al. is a prediction.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the ability to dispense in non-identical amounts) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Further the applicants argue that Ishihara et al. do not disclose the method wherein the prediction of the optimum quantity of liquid crystals is carried out for each region where a panel is to be formed in the case of a multi-shot substrate. The examiner interpreted multi-shot substrate as a substrate in which more than one shot (dispensing of drop) of liquid crystal is applied. Clearly Ishihara et al. discloses that more than one shot (dispensing of drop) can be formed on a single substrate (see column 7, lines 30-45 and column 4, lines 25-30) on which a LC panel will be formed.

Further applicants argue that the combination of Ishihara et al. and Shohara et al. do not disclose the method wherein predicting the optimum quantity of liquid crystals by measuring a height of a columnar spacer that is provided to determine a thickness between two substrates. The examiner notes that Ishihara discloses determining the optimum amount of liquid crystal by a known measured diameter (height) of spherical spacers. Shohara et al. disclose columnar spacers and spherical spacers are interchangeable. Therefore, in the combination of Ishihara et al. and Shohara et al. one would be measuring the height of the columnar spacer rather than the diameter (height) of the spherical spacer in order to determine the optimum amount of liquid crystal. In

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response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to the arguments with respect to claim 5, again the examiner maintains that the step of predicting the optimum quantity of liquid crystal is shown in the Ishihara reference. The step of forming the main seal concurrently with the prediction step was addressed with case law.

The examiner has repeated the rejection set forth in the non-final rejection for convenience below. The only changes made are those required by applicants' amendments

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3-4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishihara et al. (U.S. Patent No. 5,263,888).

Ishihara et al. discloses the method for manufacturing a liquid crystal display having liquid crystals between two substrates, the method comprising the steps of:  
dispensing liquid crystals on one substrate (see column 4, lines 33-34);

combining the substrate with and opposite substrate in vacuum with the liquid crystal dispensing surface thereof facing the opposite substrate (see columns 4, line 40-53); and

restoring the atmospheric pressure after the combining step (see column 4, line 55-66);

wherein the dispensing step has a predicting step which predicts an optimum quantity of liquid crystals encapsulated between the two substrates to be combined on at least one of the substrates and controls the quantity of dispensed liquid crystals based on the predicted quantity, the substrate being on the substrate stage (8) during said predicting step (see column 3, lines 40-45, column 5, line 40 through column 6, line 15).

Ishihara et al. also discloses the method wherein the optimum quantity of liquid crystals is predicted by measuring the dispersing density of spherical particles dispersed to determine the cell thickness between the two substrates (see column 4, line 25-30, column 5, line 55 through column 6, line 15).

Ishihara et al. also discloses the method wherein the prediction of the optimum quantity of liquid crystals is carried out for each region where a panel is to be formed in the case of a multi-shot substrate (see column 4, lines 26-30)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishihara et al. (U.S. Patent No. 5,263,888) in view of Shohara et al. (U.S. Patent No. 6,238,754).

Ishihara et al. discloses the invention substantially as claimed and rejected above, but does not disclose the method wherein optimum quantity of liquid crystals is predicted by measuring the height of a columnar spacer provided to determine a cell thickness between the two substrates. Shohara et al. disclose the method of utilizing columnar spacers in place of spherical spacers. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize columnar spacers rather than spherical spacers because Shohara et al. teach (column 11, line 55 through column 12, line 40) columnar spacers may be used in place of spherical spacers, the height or diameter of the spacer defines the space between the substrates.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishihara et al. (U.S. Patent No. 5,263,888)

Ishihara et al. discloses the invention substantially as claimed and rejected above, but does not disclose the method wherein the prediction of the optimum quantity of liquid crystals is carried out concurrently with a step of forming a main seal on either of the two substrates. The performance of two step simultaneously, which have previously been performed in sequence was held to have been obvious. *In re Tatincloux* 108 USPQ 125 (CCPA 1955). It would have been obvious to one of ordinary skill in the

art at the time the invention was made to predict the optimum quantity of liquid crystal concurrently with the step of forming a main seal on either of the two substrates in order to increase throughput.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer M. Kennedy whose telephone number is (703) 308-6171. The examiner can normally be reached on Mon.-Fri. 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

*gmu*  
jmk

*John F. Niebling*  
John F. Niebling  
Supervisory Patent Examiner  
Technology Center 2800